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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,894	09/29/2003	Mohammad Hossein Zarrabizadeh	23	1975

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Docket Administrator
Lucent Technologies Inc.
Room 3J-219
101 Crawfords Corner Road
Holmdel, NJ 07733-3030

EXAMINER

AZARIAN, SEYED H

ART UNIT	PAPER NUMBER
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2624

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE.
3 MONTHS	03/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/673,894

Applicant(s)

ZARRABIZADEH, MOHAMMAD
HOSSEIN

Examiner

Seyed Azarian

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 9-37 is/are rejected.
- 7) ☒ Claim(s) 7 and 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/27/04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6, 9-12, 14-30 and 32-37, are rejected under 35 U.S.C. 102(b) as being anticipated by Reed et al (U.S. patent 6,590,996).

Regarding claim 1, Reed discloses a method for use in watermarking a video signal, the method comprising the steps of (column 3, lines 56-66, watermark can be view as an information signal, such as an image, audio or other media);

replicating at least selected ones of bits of additional information to be impressed upon a video signal by placing said bits into at least one selected bit of an average value of a chrominance portion over a block of said video signal (column 5, lines 48-54, color image are represented as an array of color vectors in a color space, such as RGB or YUV. The watermark may be embedded in one or more of the color components of an image. In some implementations, the embedded may transform the input image into a target color space, and then proceed with the embedding process in that color space, and column 8, lines 43-56, in addition to the information conveyed in the message, the embedded may also add control bit values (signature bits) to the message to assist in verifying the accuracy of a read operation, also column 9, lines 13-25, Fig. 2, blocks of image data and replicates a watermark in each of these blocks);

and supplying said original and replicated bits to be impressed in the same block position in successive frames (column 19, lines 4-14, watermark is replicated in blocks of the original image).

Regarding claim 2, Reed discloses the invention as defined in claim 1 wherein said block position is based on said video signal having one Y, one U and one V value for every 2x2 block of full resolution of an original input video signal (see claim 1, also column 5, lines 48-54, color image are represented as an array of color vectors in a color space, such as RGB or YUV. The watermark may be embedded in one or more of the color components of an image. In some implementations, the embedded may transform the input image into a target color space, and then proceed with the embedding process in that color space, and column 9, lines 37-52, N by N block, also column 21, lines 53-65, refer to desired resolution).

Regarding claim 3, Reed discloses the invention as defined in claim 1 wherein all of said bits of additional information that are to be impressed on a first one of said successive frames are replicated to be impressed on at least a second one of said successive frames that is for display without any frame being displayed between said first frame and said second ones of said successive frames (column 39, lines 5-24, displaying).

Regarding claim 4, Reed discloses the invention as defined in claim 1 further comprising the step of adding an offset bias to an average value of a chrominance portion of at least one block of at least one frame of said successive frames that have said original and replicated bits impressed upon them in the same block positions

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(column 5, lines 48-54, color image are represented as an array of color vectors in a color space, such as RGB or YUV. The watermark may be embedded in one or more of the color components of an image. In some implementations, the embedded may transform the input image into a target color space, and then proceed with the embedding process in that color space, and column 8, lines 43-56, in addition to the information conveyed in the message, the embedded may also add control bit values (signature bits) to the message to assist in verifying the accuracy of a read operation, also column 9, lines 13-25, Fig. 2, blocks of image data and replicates a watermark in each of these blocks).

Regarding claim 6, Reed discloses the invention as defined in claim 4 wherein said offset bias is independent of any value added to said average value to bring said average value within a safe range (Fig. 8, column 17, lines 22-37, computing array of gain value and desired range).

Regarding claim 10, Reed discloses the invention as defined in claim 4 wherein additions are made to the chrominance portion of ones of the pixels of said at least one block until total of such additions equals the product of said offset bias and the number of pixels in a block, said additions being independent of any other changes made to the chrominance portion of said ones of the pixels (column 2, lines 11-39, refer to changing color and selecting pixels).

Regarding claim 11, Reed discloses the invention as defined in claim 1 further comprising the step of including a prescribed data sequence within said additional information to be impressed upon a chrominance portion of said video signal (column 6,

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lines 61 through column 7, line 25, combining the water mark with input signal are termed non-linear, such as processes that employ dither modulation, modify least significant bits, or apply quantization (decimated) index modulation, further quantization index modulation techniques employ a set of quantizers, also column 8, lines 43-56, in addition to the information conveyed in the message, the embedded may also add control bit values (signature bits) to the message to assist in verifying the accuracy of a read operation).

Regarding claim 12, Reed discloses the invention as defined in claim 11 wherein said prescribed data sequence is known to a receiver of said video signal after it is watermarked (column. 16, lines 54-63).

Regarding claim 14, Reed discloses the invention as defined in claim 11 wherein said prescribed data sequence is impressed, at least in part, upon prescribed blocks of at least one frame of said video signal (column 4, lines 11-20, data sequence).

Regarding claim 16, Reed discloses the invention as defined in claim 11 wherein said prescribed data sequence is impressed upon like-positioned prescribed blocks of multiple ones of frames of said video signal (column 9, lines 36-51, multiple blocks).

Regarding claim 18, Reed discloses the invention as defined in claim 1 further comprising the step of including a known data sequence within said additional information to be impressed upon a chrominance portion of said video signal, wherein said known data sequence is intermixed among said additional information so as to be scattered among the blocks of a frame (see claim 1, also column 4, lines 55-67, refer to distributing the message or scattering).

Regarding claim 20, Reed discloses a method for use with a receiver of a video signal containing additional information impressed upon a chrominance portion of said video signal, the method comprising the step of: combining extracted initial additional information of like block positions from prescribed frames to determine the final additional information, supplying as an output said final additional information (see claim 1, also Fig. 19, column 30, lines 54-63, extracting the bits).

Regarding claim 25, Reed discloses the invention as defined in claim 21 wherein said determined quality for each of said frames is a function of the number of errors in each of said frames for a known data sequence which is embedded in expected ones of the blocks of each of said frames (column 9, lines 3-13, the error correction coding function).

Regarding claim 27, Reed discloses the invention as defined in claim 21 wherein said determined quality is expressed as a weight value, one weight value being developed for each frame (column 15, lines 6-16, weight depending on whether they are derived from a tile with a greater measure of validity or accuracy).

Regarding claim 34, Reed discloses the invention as defined in claim 33 wherein said at least one secondary unique identifying code is made up of a series of codes that distinctly identifies individual frames of said prescribed frames (column 35, line 44 through column 36, line 4, a second implementation makes chrominance changes for certain color).

With regard to claims 5, 9, 15 and 17, the arguments analogous to those presented above for claims 1, 2, 4, 14 and 16 are respectively applicable to claims 5, 9, 15 and 17.

With regard to claims 19 and 21-24, the arguments analogous to those presented above for claims 18, 3, 11 and 20 are respectively applicable to claims 19 and 21-24.

With regard to claims 26, 28, 29 and 30, the arguments analogous to those presented above for claims 1, 2, 25 and 27 are respectively applicable to claims 26, 28, 29 and 30.

With regard to claims 32, 33 and 35-37, the arguments analogous to those presented above for claims 1, 20, 25, 27 and 34 are respectively applicable to claims 32, 33 and 35-37.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 13 and 31, are rejected under 35 U.S.C. 103(a) as being unpatentable over Reed et al (U.S. patent 6,590,996) in view of David (U.S. patent 6,538,599).

However regarding claims 13 and 31, Reed does not explicitly state, "data sequence is a Barker sequence". On the other hand David teaches (column 2, line 59 through column 3, line 6, a representative code might correspond to a Barker sequence technique).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Reed invention according to the teaching of David because it provides techniques for enhanced signal-processing gains, which can easily be implemented in an imaging device such as video camera.

Allowable Subject Matter

5. Claims 7 and 8, objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowable subject matter.

With respect to claims 7 and 8, closest prior art of (Reed and David) references do not disclose or suggest, among other things, "a first offset bias that is a positive value added to a first one of successive frames, and wherein method further comprises the step of adding a second offset bias to an average value of a chrominance portion of at least one block of at least a second frame of successive frames that have original and replicated bits impressed upon them in the same block positions, second offset bias being a negative value and at least one block of at least second frame being like-positioned within at least second frame as said at least one block of said first frame.

These key features in combination with the other features of the claimed invention are neither taught nor suggested by the art of record.

Other prior art cited

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(U.S. patent 6,829,301) to Tinker et al is cited for enhanced MPEG information distribution apparatus and method.

(U.S. patent 7,154,638) to Lapstun et al is cited for printed page tag encoder.

(U.S. patent 7,006,656) to Fridrich et al is cited for lossless embedding of data in digital objects.

(U.S. patent 6,373,960) to Conover et al is cited for embedding watermarks into compressed video data.

(U.S. patent 6,298,166) to Ratnakar et al is cited for image transformations in the compressed domain.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seyed Azarian whose telephone number is (571) 272-7443. The examiner can normally be reached on Monday through Thursday from 6:00 a.m. to 7:30 p.m.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached at (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application information Retrieval (PAIR) system. Status information for published application may be obtained from either Private PAIR or Public PAIR.

Status information about the PAIR system, see [http:// pair-direct.uspto.gov](http://pair-direct.uspto.gov). Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Seyed Azarian
Patent Examiner
Group Art Unit 2624
February 25, 2007

A handwritten signature in cursive script, reading "Seyed Azarian".